

Date: Fri, 8 Oct 93 04:30:35 PDT  
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>  
Errors-To: Ham-Space-Errors@UCSD.Edu  
Reply-To: Ham-Space@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Space Digest V93 #49  
To: Ham-Space

Ham-Space Digest                      Fri, 8 Oct 93                      Volume 93 : Issue    49

Today's Topics:

                    ANS-279 Bulletins  
                    Lindenblad Antenna (2 msgs)  
                    Satellite Help

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>  
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
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Date: Wed, 6 Oct 1993 23:54:12 GMT  
From: mvb.saic.com!unogate!news.service.uci.edu!usc!yeshua.marcam.com!  
zip.eecs.umich.edu!destroyer!nntp.cs.ubc.ca!alberta!ugc!nebulus!ve6mgs!  
usenet@network.ucsd.edu  
Subject: ANS-279 Bulletins  
To: ham-space@ucsd.edu

SB SAT @ AMSAT    \$ANS-279.01  
PHASE-3D MACHINIST NEEDED

HR AMSAT NEWS SERVICE BULLETIN 279.01 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.01

WD4FAB NEEDS A FEW GOOD MACHINIST FOR PHASE-3D

Dick Jansson (WD4FAB), AMSAT VP Engineering, has asked the AMSAT News  
Service (ANS) to post an additional request for machinist help on the  
Phase-3D project. As many of you know, several machinist volunteers have

already stepped forward in the past to assist with the project, and many have produced some very high quality materials.

Right now, however, Dick has an additional and urgent need for a machinist volunteer with access to a numerically controlled (NC) lathe and who can also produce modest quantities of small aluminium inserts for honeycomb panels. These inserts will be used in manufacturing Phase-3D's solar arrays.

Anyone with these capabilities and who would like to volunteer should contact Dick Jansson directly via INTERNET at "wd4fab@amsat.org" or you can fax him at (407) 644-9872.

Dick Daniels  
AMSAT-NA Phase-3D Project Manager

/EX  
SB SAT @ AMSAT \$ANS-279.02  
KITSAT-B BECOMES KITSAT-OSCAR-25

HR AMSAT NEWS SERVICE BULLETIN 279.02 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.02

SaTReC & KAIST Announces the Launch of KITSAT-OSCAR-25 (K0-25)

The Satellite Technology Research Center(SaTReC) at the Korean Advanced Institute of Space Technology (KAIST), announced the successful launch and activation of new OSCAR. KITSAT-2 was built at KAIST and is named as KITSAT-OSCAR-25 (K0-25) following the suggestions from AMSAT group. K0-25 was launched by ARIANE launcher at 01:45 UTC on 26-SEP-93 from Kourou Space Center of French Guyana. K0-25 was inserted into orbit after 23 minutes. K0-25 was activated 12:03 UTC on the same day from the Central Command Groundstation at SaTReC at KAIST. K0-25 carries five payloads onboard such as CCD Earth Imager, Store-and-Forward mailer, Digital Signal Processing Experiment for High Speed Modem tests, Infra-Red Sensor Experiment (IREX), Low energy electron detector (LEED) and it also has new computer system called KASCOM (KAIST Satellite Computer) for small satellite.

SaTReC sincerely express gratitude on the help that AMSAT members have given to us during our initial operation. Special thanks to W3X0, WD0E, Harold Price, G0/K8KA, Eric A. Cottrell, Steve Greene, DB20S, N3FKV, Ron Parise, W3IWI and whom were active on the INTERNET during the period.

SaTReC congratulates the AMRAD and ITAMSAT teams, and the University of Surrey, on the launch and activation of their satellites. For further information about SaTReC and the K0-25 payloads, please contact SaTReC via:

Tel: 82-42-869-8614  
Fax: 82-42-861-0064  
INTERNET: hskim@satrec.kaist.ac.kr

/EX

SB SAT @ AMSAT \$ANS-279.03  
AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 279.03 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.03

#### Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz. If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

| Date      | UTC  | Mode | Phs | NCS    | Alt NCS |
|-----------|------|------|-----|--------|---------|
| 23-Oct-93 | 1315 | B    | 154 | WB6LLO | WA5ZIB  |
| 30-Oct-93 | 1300 | B    | 62  | W5IU   | WB6LLO  |
| 13-Nov-93 | 1230 | B    | 146 | VE2LVC | W5IU    |

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations, are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate do not call on frequency, any participant is invited to act as the NCS.

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#### Slow Scan Television on AO-13

SSTV sessions will be held on immediately after the OPS Nets a downlink on a Mode-B downlink frequency 145.960 MHz.

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SB SAT @ AMSAT \$ANS-279.04  
WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 279.04 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993

TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.04

Weekly OSCAR Status Reports: 01-OCT-93

A0-13: Current Transponder Operating Schedule:

L QST \*\*\* A0-13 TRANSPONDER SCHEDULE \*\*\* 1993 Aug 25-Oct 25

Mode-B : MA 0 to MA 90 !

Mode-BS : MA 90 to MA 120 !

Mode-S : MA 120 to MA 145 !<- S transponder; B trsp. is OFF

Mode-S : MA 145 to MA 150 !<- S beacon only

Mode-BS : MA 150 to MA 180 ! Blon/Blat 180/0

Mode-B : MA 180 to MA 256 !

Omnis : MA 230 to MA 40 ! Move to attitude 210/0, Oct 25

Continuous up-to-date information about A0-13 operations is always available on the beacons at 145.812 MHz and 2400.646 MHz in CW, RTTY and 400 bps PSK. Also, these bulletins are also posted to INTERNET, ANS bulletins, Packet, PACSATs, etc., and can also be found in many international newsletters. [G3RUH/DB20S/VK5AGR]

K0-25: K0-25 has deployed its gravity gradient boom and is operating nominally. On 4-OCT-93 2:10 UTC Attitude Determination and Control System (ADCS) engineers concluded that the spinning rate of K0-25 had been reduced enough and they started preparation operation for boom deployment. At 3:56 UTC the same day, boom was successfully deployed which was proven by telemetry. After the deployment, K0-25 was confirmed to have an attitude which the bottom of the spacecraft looking down the Earth. After some upgrading work on command groundstation, receiving quality has improved and we are now having excellent contact to our bird. No fading is experienced since then. While ADCS team concentrates on their work, payload teams are preparing for their first test procedures. The V59-H is still showing best matching than any others so that we continue to use. [Hyngshin Kim, hskim@satrec.kaist.ac.kr]

POSAT-1: Attitude control operations and camera checkout continue on PoSAT-1. This evening, Monday, 4-OCT-93, a modified gravity-gradient-lock program was loaded to the 80C186 OBC. It is hoped that this modified algorithm will remove the preference toward upside down lock which has thus far effected the ADCS operations. Previously, the decision when to initiate the gravity capture sequence has been taken manually from the control station. The present experiments are aimed at commissioning a fully-automatic software package. If this effort is not successful in the next few days, the previous, manual operation will be executed. [G0/K8KA]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on

INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

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SB SAT @ AMSAT \$ANS-279.05  
AMSAT-NA SPACE SYMPOSIUM INFO

HR AMSAT NEWS SERVICE BULLETIN 279.05 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.05

AMSAT-NA Space Symposium Set For 7-11 OCT In Arlington, TX

Arrangements have been finalized for the AMSAT-NA Annual Meeting and Space Symposium '93. The proceedings are at the printers and the speakers list is full (30 Speakers!). The Saturday evening Banquet Program has now been arranged and will be very entertaining. Even if you have not registered, YOU ARE STILL INVITED! JUST SHOW UP AT THE QUINTA INN LOCATED IN ARLINGTON, TX AND REGISTER ON THE SPOT! The Talk-In frequency is 147.140 (+600 KHz). This promises to be one of the best Symposiums yet so don't miss it. See you in Arlington, TX, 8-10 October '93!

Keith Pugh, W5IU

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SB SAT @ AMSAT \$ANS-279.06  
CALL FOR AMSAT AC

HR AMSAT NEWS SERVICE BULLETIN 279.06 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.06

AMSAT Needs Area Coordinators (AC)

Area Coordinators (AC) are needed in all parts of the country as part of an effort to increase the visibility of AMSAT's existing satellite operations and Phase-3D developments. AC are the essential interface between AMSAT and the local radio amateur population. Area Coordinators are volunteers whose activities may include AMSAT booths at hamfests, local AMSAT nets, presentations to local clubs in addition individual "Elmering". AC thru their activities increase awareness of the radio amateur satellite program in addition tpromoting AMSAT membership and fundraising for Phase IIID.

If you might be interested in becoming an Area Coordinator and providing invaluable service both to AMSAT and the "hams" in your community please contact Larry Brown (NW7N) or the AMSAT office, (301) 589-6062. Or E-mail to NW7N your current address and he will return some additional information on the AC position. NW7N would also be interested in answering your questions or discussing this activity either by phone or E-mail. He will also be at the Annual Meeting in Arlington and hopes to see you there.

Larry Brown (NW7N) can be reached in the following ways:

Internet: nw7n@amsat.org  
Phone: (602) 886-1957 (evenings)

/EX  
SB SAT @ AMSAT \$ANS-279.07  
NEW AO-13 ZRO SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 279.07 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 6, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-279.07

WA5ZIB Presents A New AO-13 ZRO Test Schedule: All Are Invited

The ZRO tests of September 26th and October 2nd went very well. Noise levels both here and in Europe were very low and several stations reported hearing and copying the code groups at new levels. New "Z9 Club" entries are expected based on the conversations with test participants. One test remains this season on Monday, 18-OCT-93 at 04:30 UTC. For those in North America this is late on Sunday night, the 17th. The ZRO tests are held on 145.840 MHz at 10 words-per-minute. The signal strength at level "zero" is set to match the general telemetry beacon, while level "9" is 27 dB lower. Level "A" at 30 dB down is now being sent as a regular part of each run. All listener reports with date of test and numbers copied should be sent to Andy MacAllister (WA5ZIB), AMSAT V.P. of User Operations, 14714 Knights Way Drive, Houston, TX 77083. A report will be returned verifying the level of accurate reception.

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Date: Fri, 8 Oct 1993 00:56:10 GMT  
From: newsflash.concordia.ca!mizar.cc.umanitoba.ca!mona.muug.mb.ca!  
bwalzer@uunet.uu.net  
Subject: Lindenblad Antenna  
To: ham-space@ucsd.edu

In <CEJGF4.HFr@freenet.carleton.ca> ae517@Freenet.carleton.ca (Russ Renaud) writes:

>I saw a brief construction article on the Lindenblad antenna for 137MHz  
>using folded dipoles placed inside PVC tubing. The author does not  
>described the method used to connect the 4 feedlines together, referencing  
>past construction articles, which I assume provided these details.

>Should all four dipoles be fed in phase?

Yes. The one I made just had you parallel 4 hunks of 300 ohm twinlead and had you attach the resulting mess to a bnc connector.

>Has anyone on this newgroup actually built a Lindenblad. How well does it  
>work for LEO satellites, such as the APT birds or digital hamsats?

I built a 137MHz Lindenblad by scaling the dimensions from a 146MHz design in The Satellite Experimenters Handbook. I used CPVC pipe for the support and folded heavy copper wire dipoles for the elements. The result was a bit fragile. Putting the dipoles inside PVC pipe sounds like a better idea. At 137MHz you end up with a really unwieldy antenna. It looked really bizarre on the roof, something like a perch for giant deformed birds.

It worked not all that great for weathersat reception. The problem seemed to be periodic reflections from the ground. I would get regular noise bands across the image. It also seemed to be fairly subject to terrestrial noise pickup (ignition and/or powerline noise).

On the other hand, it seemed to cause a fairly constant signal level across the pass. I would hear the satellite the instant it came above the horizon (the Lindenblad has most of it's gain in that direction). The Lindenblad might be a nice antenna for LEO voice or data communication if one could live with the occasional fade. I've seen stuff written by others who use them for the microsats.

I eventually ended up with a turnstile with a large area of chicken wire as the reflector (something like 12 feet across (4 Metre)). This works very well for weathersat work. I get noise free images from about 25 degrees elevation and above. You really need the large reflector to prevent the turnstile from seeing the ground reflections. I have no idea how the turnstile-reflector that used to be in the Radio Amateur handbook worked with the specified tiny reflector.

I'm wandering off the topic a bit, but if I was to do it again I would investigate the quadrifilar helix as a weather sat antenna. You could create a really nice gain pattern with little gain toward the ground. If reflections were a problem one could try a small reflector below the helix

to put them where they wouldn't be a problem.

I haven't tried it, but the Zapper as described in The Weather Satellite Handbook looks good for weather sat work. It's just a 2 element circular polarized beam pointing straight up.

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Bruce Walzer |Voice: (204) 783-4983  
Winnipeg MB |Internet: bwalzer@mona.muug.mb.ca  
Canada |AmateurRadio: VE4XOR  
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Date: Thu, 7 Oct 1993 17:54:40 GMT  
From: swrinde!elroy.jpl.nasa.gov!usc!howland.reston.ans.net!torn!nott!cunews!  
freenet.carleton.ca!Freenet.carleton.ca!ae517@network.ucsd.edu  
Subject: Lindenblad Antenna  
To: ham-space@ucsd.edu

I saw a brief construction article on the Lindenblad antenna for 137MHz using folded dipoles placed inside PVC tubing. The author does not described the method used to connect the 4 feedlines together, referencing past construction articles, which I assume provided these details.

Should all four dipoles be fed in phase?

Has anyone on this newgroup actually built a Lindenblad. How well does it work for LEO satellites, such as the APT birds or digital hamsats?

Any info would be appreciated.

73 de ve3uav/aa8lu

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Date: Thu, 7 Oct 1993 13:01:13 GMT  
From: munnari.oz.au!spool.mu.edu!howland.reston.ans.net!torn!nott!emr1!  
stephens@network.ucsd.edu  
Subject: Satellite Help  
To: ham-space@ucsd.edu

fax%sparc4@0livetti.COM (Marco Fassiotto) writes:

>Hi,  
>I wish to move the first steps in satellite work without having to setup



>a special station but using my hf rig to rx in the 10mt band and uplinking  
>on 2meters.

>I've been told that the easier sats to work with this "recycled" setup are  
>the RS series. Now, I know how to find the keplerian elements and  
>the up/downlink freqs for the sats of interest but I still need a program that  
>can tell me basically when should I turn my rig on.

>I already have InstantTrack but i can't get it to work because it says it  
>needs the rotator control hardware. I'm almost sure I'm missing something  
>and I'd be glad to have some directions in case this is the right package.

>Anyway, also having a pointer (ftp site) to a simpler software (possibly  
>runnable on poor adapters like CGA, HGC) that shows the passing times  
>and az/el coordinates would be very fine.

>Thanks, Marco

For general purpose use there are three programs I would recommend.  
Traksat, PCtrack and USAT92B. The first two are shareware, the other  
is freeware (I think) . Find them on a SIMTEL mirror (e.e. oak. oakland.edu)  
under pub/msdos/satellite. You will need two line elements (PCT also  
takes ARRL elements). USAT includes a quick basic source list.  
The program names are TRAK280.zip PCT214a.ZIP and USAT92b.zip.  
Instant Trak can be purchased from AMSAT.

73 VE3PYG

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Dave Stephenson  
Geological Survey of Canada  
Ottawa, Ontario, Canada  
Internet: stephens@geod.emr.ca

\*Om Mani Padme Hum 1-2-3\*

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End of Ham-Space Digest V93 #49

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